

Applicant: Anil Nadkarni, *et al.*  
Serial No.: 08/678,776  
Filed: July 11, 1995  
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reply to the Office Action dated October 27, 1998 in the above-identified application.

A reply to the October 27, 1998 Office Action is due by January 27, 1999. Accordingly, this Amendment and Reply is timely filed.

#### AMENDMENT

Please amend the above-identified application as follows:

#### In The Claims

Please amend claims 1, 3, 7, 9, 13, 15, 17, 19, 21-24, 26, and 35 to read as follows:

C 1  
-- 1. (Thrice Amended) A frangible bullet comprising at least 60 percent by weight copper and manufactured by pressing a copper-containing powder in a die to form a pressed powder compact and subsequently sintering said pressed powder compact, [it under conditions] wherein said sintering is partially impeded either  
(i) by the addition of a frangibility effecting additive to said powder, or  
(ii) through control of density of said pressed powder compact, or  
(iii) through control of sintering temperature, or sintering time, or  
any combination of the above; so as to produce a bullet capable of fragmenting upon impact with

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C1 a target.

C2 13<sup>6</sup> 3. (Twice Amended) The bullet of claim [1] ~~53~~<sup>6</sup> wherein the [powder further] frangibility effecting additive comprises an oxide additive.

C3 3<sup>6</sup> 1. (Amended) The bullet of claim [1] ~~53~~<sup>6</sup> wherein the powder is a dispersion strengthened copper powder.

C4 23<sup>24</sup> 9. (Twice Amended) The bullet of claim [1] ~~53~~<sup>6</sup> wherein the [powder further] frangibility effecting additive comprises a solid lubricant additive.

C5 27<sup>28</sup> 13. (Twice Amended) The bullet of claim [1] ~~53~~<sup>6</sup> wherein the [powder further] frangibility effecting additive comprises a nitride additive.

C6 28<sup>29</sup> 15. (Twice Amended) The bullet of claim [1] ~~53~~<sup>6</sup> wherein the [powder further] frangibility effecting additive comprises an oxide additive and a solid lubricant additive.

C7 31<sup>30</sup> 17. (Twice Amended) The bullet of claim [1] ~~53~~<sup>6</sup> wherein the [powder further] frangibility effecting additive comprises a carbide additive.

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C8 34 33 9  
19. (Twice Amended) The bullet of claim [1] ~~53~~ wherein the [powder further] frangibility  
effecting additive comprises a boride additive.

C9 34 35 6  
21. (Amended) The bullet of claim [1] ~~53~~ wherein the powder is a prealloyed brass containing  
from 5 to 40 percent by weight of zinc.

37 36 6  
22. (Amended) The bullet of claim [1] ~~53~~ wherein the powder is a mixture of copper powder and  
from 5 to 40 percent by weight of zinc powder.

38 37 6  
23. (Amended) The bullet of claim [1] ~~53~~ wherein the powder is a prealloyed bronze containing  
from 2 to 20 percent by weight of tin.

38 38 6  
24. (Amended) The bullet of claim [1] ~~53~~ wherein the powder is a mixture of copper powder and  
from 2 to 20 percent by weight of tin powder.

410 40 39  
26. (Thrice Amended) A method of making a frangible bullet which comprises pressing a  
powder containing at least 60 percent by weight copper in a die to form a pressed powder  
compact and subsequently sintering [it under conditions] said pressed powder compact, wherein  
said sintering is partially impeded either

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(i) by the addition of a frangibility effecting additive to said powder, or

(ii) through control of density of said pressed powder compact, or

(iii) through control of sintering temperature, or sintering time, or

any combination of the above; so as to produce a bullet capable of fragmenting upon impact with  
a target.

35. (Thrice Amended) A powder useful for manufacturing a frangible item by pressing in a die and subsequently sintering, said powder comprising at least about 60 percent by weight copper and [an] a frangibility effecting additive selected from the group consisting of an oxide, a solid lubricant, a nitride, a carbide, a boride, and combinations thereof.

Kindly add new claims 53- 66 as follows:

53. (New) The bullet of claim 1, wherein the sintering is partially impeded by addition of a frangibility effecting additive to said powder; said additive being selected from the group consisting of an oxide, a solid lubricant, a nitride, a carbide, a boride, and a combination of any thereof.

54. (New) The method of claim 26, wherein the sintering is partially impeded either

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(ii) through control of density of said pressed powder compact, or  
(iii) through control of sintering temperature, or sintering time, or any combination thereof.

<sup>7</sup> 55. (New) The bullet of claim 1 wherein the sintering is partially impeded either  
(ii) through control of density of said pressed powder compact, or  
(iii) through control of sintering temperature, or sintering time, or any combination thereof.

<sup>8</sup> 56. (New) The bullet of claim <sup>1</sup> 55, wherein the powder is a dispersion strengthened copper powder.

<sup>9</sup> 57. (New) The bullet of claim <sup>8</sup> 56 wherein the dispersion strengthened copper powder is made by internal oxidation of a dilute solid solution alloy of copper and a reactive element selected from the group consisting of Si, Al, Ti, and Mg.

<sup>10</sup> 58. (New) The bullet of claim <sup>7</sup> 55, wherein the powder is a prealloyed brass containing from 5 to 40 percent by weight of zinc.

C 12

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<sup>11</sup>  
~~58~~. (New) The bullet of claim <sup>7</sup>55, wherein the powder is a mixture of copper powder and from 5 to 40 percent by weight of zinc powder.

<sup>12</sup>  
~~60~~. (New) The bullet of claim <sup>7</sup>55 wherein the powder is a prealloyed bronze containing from 2 to 20 percent by weight of tin.

<sup>13</sup>  
~~61~~. (New) The bullet of claim <sup>7</sup>55 wherein the powder is a mixture of copper powder and from 2 to 20 percent by weight of tin powder.

<sup>14</sup>  
~~62~~. (New) The bullet of claim <sup>7</sup>55, wherein the powder comprises at least about 99.5 percent by weight copper.

<sup>15</sup>  
~~63~~. (New) The bullet of claim <sup>7</sup>55, wherein the powder is a mixture of about 90 percent by weight copper and about 10 percent by weight tin.

<sup>16</sup>  
~~64~~. (New) The bullet of claim <sup>7</sup>55, wherein the powder is a mixture of about 70 percent by weight copper and about 30 percent by weight zinc.

C12

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